

REMARKS

Claims 16 – 32 are currently pending in the application. By the present amendment, claim 22 has been amended and new claims 31 and 32 have been presented for the Examiner's consideration.

Specifically, claim 22 has been amended to correct a translation error. More specifically, claim 7 of International Application PCT/DE2004/002353, of which the instant application is a National Stage application, contained the term "mündet." In preparing the National Stage application, in drafting corresponding claim 22, this term was translated as "discharge." However, Applicants submit that "mündet" is better translated as "to open out into." Thus, Applicants have amended claim 22 to recite that the suction line "opens out into a well," as shown in Figure 1 and described in the specification. Additionally, new claims 31 and 32 have been presented for the Examiner's consideration.

Applicants submit that no new matter is added by the above amendment. Support for the amendment may be found, for example, at least in Figure 1 and paragraphs, [0008], [0019] and [0024] (as numbered in the published application US 2008/0210436) and the untranslated International Application PCT/DE2004/002353. Reconsideration of the rejected claims in view of the above amendments and below remarks is respectfully requested.

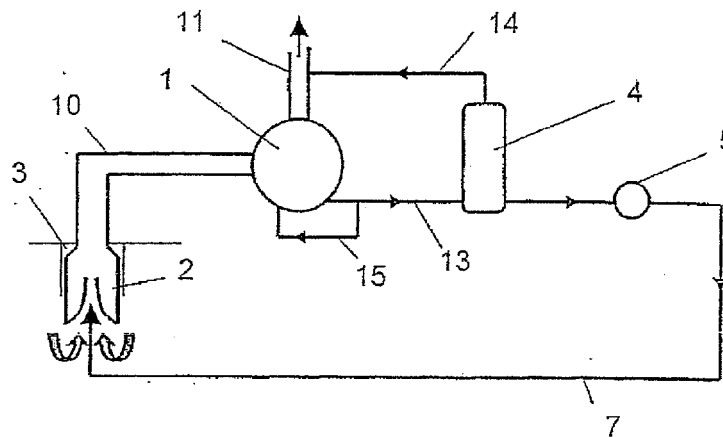
35 U.S.C. §112, 1st Paragraph Rejection

Claims 22 – 30 were rejected under 35 U.S.C. §112, 1st paragraph for failing to comply with the enablement requirement. Specifically, the Examiner raised two issues. First, the Examiner notes that previously presented claim 22 recited "a suction line configured to discharge into a well," which the Examiner suggests is seemingly the reverse of the disclosure. As

discussed above, Applicants submit that the confusion is a result of a translation error, which is remedied by the above amendment. That is, while “mündet” was translated as “discharge” in preparing the National Stage application, a more appropriate translation of “mündet” is “opening out in.” Thus, Applicants have amended claim 22 to recite “opening out into,” as discussed above.

Second, the Examiner notes that claim 22 additionally recites “a feed line connecting the pressure chamber of the displacement pump with a high-pressure side of at least one ejector pump arranged on a suction side in the delivery direction of the displacement pump,” and asserts that this seems to be the reverse of the disclosure. Applicants respectfully disagree.

As shown in Figure 1 of the instant application, which Applicants have reproduced below, Applicants submit the above-noted portion of claim 22 accurately describes the arrangement of the present invention.



The Examiner states that the “drawings show the suction line 10 as the line which feeds the displacement pump and the feed line 7 as the line which discharges into the well.” Applicants note that the Examiner’s understanding of Figure 1 is correct. As shown in Figure 1, a feed line 7 connects the pressure chamber of the displacement pump 1 with a high-pressure side of at least one ejector pump 2, which is arranged on a suction side in the delivery direction of the

displacement pump 1. That is, the ejector pump is arranged on a suction side of the displacement pump.

Thus, for these reasons, Applicants respectfully submit that claim 22 does comply with the enablement requirement. Accordingly, Applicants respectfully request the rejection of claims 22 – 30 be withdrawn.

35 U.S.C. §102 Rejection

Claims 16 and 17 were rejected under 35 U.S.C. §102(e) for being anticipated by U. S. Patent No. 7,077,207 issued to Stark et al. (“Stark”). This rejection is respectfully traversed.

To anticipate a claim, each and every element as set forth in the claim must be found, either expressly or inherently described, in a single prior art reference. MPEP § 2131.

Applicants submit that Stark does not disclose each of the features of the present invention.

Independent Claim 16

The present invention relates to a method for delivering a multi-phase mixture. Claim 16 recites, in pertinent part:

. . . using a displacement pump through which the multi-phase mixture is pumped, comprising, on a pressure side, splitting off a partial liquid flow from a main delivery flow and guiding the split partial liquid flow to a high-pressure side of at least one ejector pump arranged on a suction side of the displacement pump as an auxiliary delivery device.

Applicants submit that Stark does not disclose each of the features of claim 16. For example, Applicants submit that Stark does not disclose using a displacement pump through which the multi-phase mixture is pumped, at least one ejector pump arranged on a suction side of

the displacement pump, or on a pressure side, splitting off a partial liquid flow, as recited in claim 16.

In addressing claim 16, the Examiner asserts that:

Stark discloses a method for delivering a multi-phase mixture from a well using a displacement pump (3) through which the multi-phase mixture is pumped, comprising, on a pressure side, splitting off a partial liquid flow from a main delivery flow (via separator 9) and guiding the split partial liquid flow to a high-pressure side of at least one ejector pump (7) arranged on a suction side of the displacement pump as an auxiliary delivery device.

Applicants respectfully disagree.

No Disclosure of Displacement Pump through which Multi-Phase Mixture is Pumped

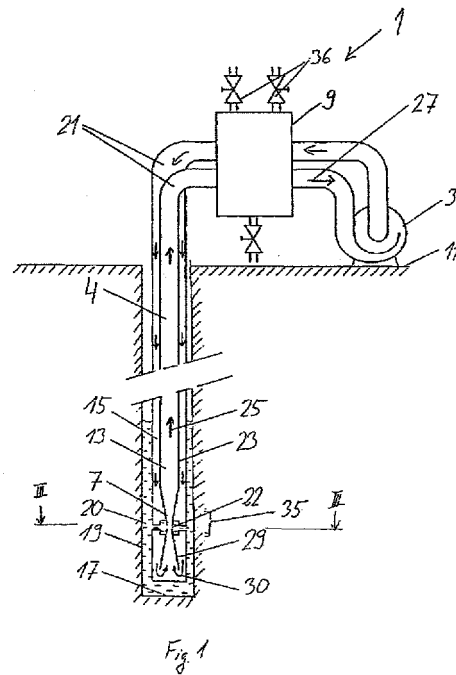
Stark discloses a double-cone device and pump. More specifically, Stark discloses at column 2, lines 20 – 37 (emphasis added):

With reference to FIG. 1, a DCT well-pump installation 1 essentially comprises a circulating pump 3, a system of double-walled tubing 4, an open double-cone (ODC) unit 7 and an optional separator unit 9. The circulating pump 3 is placed at the surface 11 in a secure location. It supplies either the inner 13 or outer 15 section of the double-walled tubing 4, which links the pump 3 to the ODC unit 7. The tubing 4 may be rigid, semi-rigid, or flexible. An example of the latter is a fire hose within a fire hose. The ODC unit 7, which is placed at the bottom 17 of the well 19, draws the liquids 20 and/or gases to be pumped through the inlet 22 into the circulating stream 21. The resulting mixture passes directly into the exhaust section 23 of the double-walled tubing and rises to the surface 11 as indicated by upwardly directed arrows 25. This mixture enters the separator 9 at the surface where the carrier liquid is stripped out and returned to the circulating pump 9 (arrow 27).

Additionally, Stark discloses at column 4, lines 19 – 24 (emphasis added):

On reaching the separator 9, the gas and any other foreign material is stripped from the carrier liquid prior to its return to the circulating pump 3. The solid matter is also removed at the separator.

Applicants have reproduced Figure 1 of Stark below.



Applicants submit that Stark does not disclose using a displacement pump through which the multi-phase mixture is pumped, as recited in claim 16. Rather, as explained in the above-reproduced passages of Stark, Applicants submit that only a carrier liquid is pumped through the circulating pump 3 (which the Examiner designates as the recited displacement pump). That is, a separation unit 9 is located upstream of the circulating pump 3 and functions to strip out gas and any other foreign material from the carrier liquid prior to its return to the circulating pump 3.

In view of the above, Applicants submit that the circulating pump 3 of Stark only pumps a single phase (i.e., the carrier liquid) and does not pump a multi-phase mixture. Thus, Applicants submit Stark does not disclose using a displacement pump through which the multi-phase mixture is pumped, as recited in claim 16.

No Disclosure of Ejector Pump Arranged on Suction Side of Displacement Pump

Applicants submit that Stark does not disclose at least one ejector pump arranged on a suction side of the displacement pump. That is, as shown in Figure 1, Applicants submit that Stark discloses that the Examiner-designated ejector pump 7 is located on a suction side of the separation unit 9. Moreover, as shown in Figure 1, Applicants submit that the separation unit 9 is on the suction side of the Examiner-designated displacement pump 3. That is, in contrast to the claimed invention, wherein the ejector pump is immediately upstream of the displacement pump, with Stark the separation unit 9 intervenes between the Examiner-designated ejector pump and the Examiner-designated displacement pump. Thus, Applicants respectfully submit that Stark does not disclose at least one ejector pump arranged on a suction side of the displacement pump, as recited in claim 16.

No Disclosure of On a Pressure Side, Splitting Off a Partial Liquid Flow

Applicants submit that Stark does not disclose on a pressure side, splitting off a partial liquid flow from a main delivery flow, as recited in claim 16. In addressing this feature, the Examiner asserts that the splitting off of the partial liquid flow occurs via the separation unit 9.

According to Stark, the carrier liquid is pumped by a circulation pump to a down hole jet pump. The medium (hydrocarbons) to be pumped will be sucked through the inlet into the circulating stream and commingles with the carrier fluid. In the separator the carrier fluid is separated from the medium to be pumped and directed to the circulating pump. The medium to be pumped is discharged from the separator. Moreover, as discussed above, Applicants submit the separation unit 9 is located upstream of the circulating pump 3 and functions to strip out gas and any other foreign material from the carrier liquid prior to its return to the circulating pump 3.

Thus, in view of the above, Applicants submit that the separation unit is on the suction side of the circulating pump. In other words, Applicants submit the separation unit is not on the pressure side of the circulating pump. As such, Applicants respectfully submit that Stark does not disclose on a pressure side, splitting off a partial liquid flow from a main delivery flow, as recited in claim 16.

Moreover, were the separation unit of Stark to be arranged on the pressure side of the circulating pump, Applicants submit Stark would not operate in its intended manner or with the same principle of operation. That is, arranging the separation unit on the pressure side of the circulating pump would necessitate that the circulating pump transmit the carrier fluid and the medium (hydrocarbons) from the well, whereas Stark operates the circulating pump with only carrier fluid passed there through.

Therefore, for at least these reasons, Applicants respectfully submit that Stark does not disclose each of the features of claim 16, and does not anticipate the present invention.

Dependent claim 17

Claim 17 is a dependent claim, depending from a distinguishable base claim. Accordingly, this claim should also be in condition for allowance at least based upon its dependency.

Accordingly, for these reasons, Applicants respectfully request the rejection of claims 16 and 17 over Stark be withdrawn.

35 U.S.C. §103 Rejections

Claims 18, 22, 23, 25, 26 and 28 – 30 were rejected under 35 U.S.C. §103(a) for being unpatentable over Stark in view of U.S. Patent No. 5,624,249 issued to Rohlfing (“Rohlfing”). Claims 19 and 24 were rejected under 35 U.S.C. §103(a) for being unpatentable over Stark in view of Rohlfing and U.S. Patent No. 4,066,123 issued to Skinner (“Skinner”). Claim 20 was rejected under 35 U.S.C. §103(a) for being unpatentable over Stark. Claim 21 was rejected under 35 U.S.C. §103(a) for being unpatentable over Stark in view of U.S. Patent No. 6,260,627 issued to Rivas (“Rivas”). Claim 27 was rejected under 35 U.S.C. §103(a) for being unpatentable over Stark in view of Rohlfing and Rivas. Applicants respectfully traverse these rejections.

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness. See MPEP §2142. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.¹ Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d

¹ While the *KSR* court rejected a rigid application of the teaching, suggestion, or motivation (“TSM”) test in an obviousness inquiry, the [Supreme] Court acknowledged the importance of identifying “a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does” in an obviousness determination. *Takeda Chemical Industries, Ltd. v. Alphapharm Pty., Ltd.*, 492 F.3d 1350, 1356-1357 (Fed. Cir. 2007) (quoting *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1731 (2007)).

1438 (Fed. Cir. 1991). Applicants submit that the combination of references do not teach or suggest each of the claim features of the instant invention. Additionally, with regard to claims 18 and 22, Applicants submit that it would not have been obvious to modify Stark in view of Rohlfing in the manner asserted by the Examiner.

Independent claim 22 over Stark in view of Rohlfing

Independent claim 22 recites, in pertinent part:

...
at least one separation device is provided within the displacement pump housing to divide a gas phase from a liquid phase in the pressure chamber,
a suction line configured to open out into a well, and
a feed line connecting the pressure chamber of the displacement pump with a high-pressure side of at least one ejector pump arranged on a suction side in a delivery direction of the displacement pump and which guides the separated liquid phase to the ejector pump.

In addressing claim 22 (and claim 18), the Examiner asserts that Stark teaches or suggests all of the features of the present invention, except for “the separator being located within the displacement pump.” More specifically, the Examiner asserts:

Stark discloses a pump installation comprising a displacement pump (3) for delivering multi-phase mixtures with a pump housing in which a pressure chamber is provided, at least one separation device (9) to divide a gas phase from a liquid phase in the pressure chamber, a suction line (15) configured to discharge into a well, and a feed line (13) connecting the pressure chamber of the displacement pump with a high-pressure side of at least one ejector pump arranged on a suction side in a delivery direction of the displacement pump and which guides the separated liquid phase to the ejector pump.

Stark discloses a separator which separates a liquid phase from a gas phase (see column 4, lines 19 – 23). However, Stark fails to disclose the separator being located within the displacement pump, as recited in claims 18 and 22.

Additionally, the Examiner asserts that Rohlffing teaches a screw-type pump that is a combined displacement pump and separator. Moreover, the Examiner asserts:

. . . it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have combined the displacement pump and separator of Stark into a single housing, as shown by Rohlffing, since this would have simplified the construction of the pumping system, and further, since applicant admits that "displacement pumps and multi-phase pumps, including their pressure chambers and housings, and how they are operable to separate are well known in the art"

. . . .

Applicants respectfully disagree with the Examiner's assertion that it would have been obvious to combine Stark and Rohlffing in the manner asserted. Additionally, Applicants respectfully disagree with the Examiner's assertion that Stark teaches or suggests the features of the present invention (except for "the separator being located within the displacement pump"). For example, Applicants submit that Stark does not teach or suggest: 1) a displacement pump for delivering multiphase mixtures; 2) at least one separation device to divide a gas phase from a liquid phase in the pressure chamber; and 3) at least one ejector pump arranged on a suction side in a delivery direction of the displacement pump.

Not Obvious to Combine Stark and Rohlffing in the Manner Asserted by Examiner

Applicants note that a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Further, Applicants note that if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221

USPQ 1125 (Fed. Cir. 1984). Additionally, Applicants note that if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Applicants submit that the Examiner-proposed modification of Stark (i.e., the substitution of the pump of Rohlfing for the separation unit and circulating pump of Stark) would render Stark unsatisfactory for its intended purpose.

As discussed above, Stark uses the separation unit 9, which is located upstream of the circulating pump 3, to strip out gas and any other foreign material (which Stark identifies as “risk material”) from the carrier liquid prior to its return to the circulating pump 3, such that only the carrier liquid is pumped through the circulating pump 3. In this way, the “risk material” will not detrimentally affect the circulating pump 3.

Rohlfing is directed to a multi-phase pumping process and pump, wherein the multi-phase stream is separated into a liquid portion and a gas portion. A partial liquid volume flow (around 3 percent) is recirculated through the pump to “wet the shaft seals permanently and sufficiently.” The remainder of the liquid volume flow (i.e., the surplus liquid volume flow (see claim 1)) and the gas portion are then recombined at the outlet and output by the pump. Thus, even though Rohlfing is operable to perform a separation of gas and liquid phases, Applicants submit that Rohlfing still outputs a multi-phase mixture. Moreover, Applicants submit that Rohlfing does not teach or suggest a recirculation of the hydrocarbons to an ejector pump. That is, the pumped medium, which is not separated and recirculated for lubrication of the pump, is discharged completely.

As such, Applicants respectfully submit that the Examiner-proposed modification of Stark (i.e., the substitution of the pump of Rohlfing for the separation unit and circulating pump of Stark) would render Stark unsatisfactory for its intended purpose. That is, Stark uses the separation unit 9 to strip all but the carrier liquid from the multi-phase mixture, such that the circulating pump 3 only delivers carrier liquid back down the well.

However, were Stark to be modified as the Examiner asserts, the proposed combination would result in an apparatus in which the multi-phase output of Rohlfing is delivered back down the well, contrary to the intended purpose of Stark. Accordingly, Applicants respectfully submit that there is no suggestion or motivation to make the proposed modification.

Additionally, Applicants submit that the Examiner-proposed modification of Stark would change the principle of operation of Stark. That is, as explained above, the Examiner-proposed modification of Stark requires that a multi-phase output of Rohlfing is delivered back down the well, which is contrary to Stark's disclosure of stripping out all but the carrier liquid and sending only the carrier liquid back down the well.

As such, Applicants submit that the Examiner-proposed combination of Stark and Rohlfing would change the principle of operation of Stark. Accordingly, Applicants respectfully submit that the teachings of the references are not sufficient to render the claims *prima facie* obvious.

Stark Does Not Disclose a Displacement Pump for Delivering Multi-phase Mixtures

Applicants submit that Stark does not disclose a displacement pump for delivering multi-phase mixtures, as the Examiner asserts. That is, as discussed above, the pumping fluid of Stark

is not a multi-phase mixture, but rather, a single phase mixture consisting of the carrier fluid. As such, Applicants respectfully submit that Stark does not disclose a displacement pump for delivering multiphase mixtures, as recited in claim 22.

Stark Does Not Disclose Separation Device in the Pressure Chamber

Applicants respectfully submit that Stark does not disclose at least one separation device to divide a gas phase from a liquid phase in the pressure chamber, as the Examiner asserts. That is in treating previous features of claim 22, the Examiner asserts “Stark discloses a pump installation comprising a displacement pump (3) for delivering multi-phase mixtures with a pump housing in which a pressure chamber is provided . . .” Thus, Applicants submit the Examiner has designated the pressure chamber as part of the displacement pump. However, in treating further features of claim 22, the Examiner asserts (emphasis added) “Stark discloses . . . at least one separation device (9) to divide a gas phase from a liquid phase in the pressure chamber . . .”

However, as shown in Figure 1 of Stark, Applicants respectfully submit that the separation device 9 is separate from the Examiner-designated displacement pump 3, such that the separation device does not divide a gas phase from a liquid phase in the pressure chamber (which the Examiner has designated as part of the displacement pump 3), as the Examiner asserts. Thus, Applicants respectfully submit that Stark does not disclose at least one separation device to divide a gas phase from a liquid phase in the pressure chamber, as the Examiner asserts.

No Teaching or Suggestion of Ejector Pump Arranged on a Suction Side in a
Delivery Direction of the Displacement Pump

Applicants submit that Stark in view of Rohlfing does not teach or suggest at least one ejector pump arranged on a suction side in a delivery direction of the displacement pump. That is, for the reasons discussed above, with regard to claim 16, Applicants respectfully submit that the Examiner-designated ejector pump 7 is not located on a suction side in a delivery direction of the Examiner-designated displacement pump 3. Rather, as shown in Figure 1, Applicants submit that Stark discloses that the Examiner-designated ejector pump 7 is located on a suction side of the separation unit 9. Moreover, as shown in Figure 1, Applicants submit that the separation unit 9 is on the suction side of the Examiner-designated displacement pump 3. That is, in contrast to the present invention, wherein the ejector pump is immediately upstream of the displacement pump, with Stark the separation unit 9 intervenes between the Examiner-designated ejector pump and the Examiner-designated displacement pump.

Moreover, Applicants submit that Roling does not cure the deficiencies of Stark. That is, as Roling only discloses a screw pump with no relations to other features of a pumping installation, e.g., another pump, Applicants respectfully submit that Roling does not teach or suggest at least one ejector pump arranged on a suction side in a delivery direction of the displacement pump.

Thus, Applicants respectfully submit that Stark in view of Rohlfing does not teach or suggest at least one ejector pump arranged on a suction side in a delivery direction of the displacement pump, and does not render claim 22 unpatentable.

Thus, for at least these reasons, Applicants respectfully submit that Stark in view of Rohlfing does not render claim 22 unpatentable.

Dependent claims 18, 23, 25, 26 and 28 – 30 over Stark in view of Rohlfing

Claims 18, 23, 25, 26 and 28 – 30 are dependent claims, depending from respective distinguishable base claims. Accordingly, these claims should also be in condition for allowance at least based upon their respective dependencies.

Claim 18

Additionally, Applicants submit that Stark in view of Rohlfing does not render unpatentable the features of claim 18. Claim 18 recites in pertinent part:

. . . carrying out a separation of a gas phase and a liquid phase in the displacement pump, wherein the partial liquid flow to the ejector pump is split off from the separated liquid phase.

The Examiner addressed claim 18 in a common rejection with claim 22, as set forth above with the discussion of claim 22. For the reasons set forth above, with regard to claim 22, Applicants submit that it would not have been obvious for one ordinarily skilled in the art to modify Stark as the Examiner proposed. That is, Applicants submit that the Examiner-proposed modification of Stark (i.e., the substitution of the pump of Rohlfing for the separation unit and circulating pump of Stark) would render Stark unsatisfactory for its intended purpose and would change the principle of operation of Stark.

Thus, Applicants submit that Stark in view of Rohlfing does not render unpatentable the features of claim 18.

Claim 25

Additionally, Applicants submit that Stark in view of Rohlfing does not teach or suggest each of the features of claim 25. Claim 25 recites, in pertinent part:

. . .an additional separator arranged in the feed line for dividing the liquid phase from the gas phase.

In rejecting claim 25, the Examiner states that:

Stark does appear to disclose passing the fluid through the separator (9) twice (see Figure 1), however, Stark fails to disclose an additional separator. Even so, it would have been considered obvious to one of ordinary skill in the art, to have added an additional separator to the system of Stark, as this would have ensured that most or all of the gas was eliminated from the carrier fluid, and furthermore, because it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

Applicants respectfully disagree.

Initially, while acknowledging that Stark may “appear” to disclose passing the fluid through the separator 9 twice, Applicants submit that the disclosure of Stark states that the fluid is passed through the separator 9 only once. For example, Stark discloses at column 4, lines 19 – 24 (emphasis added):

On reaching the separator 9, the gas and any other foreign material is stripped from the carrier liquid prior to its return to the circulating pump 3.
The solid matter is also removed at the separator.

Thus, Applicants submit that Stark does not disclose passing the fluid through the separator 9 twice.

Furthermore, Applicants submit that it would not have been obvious to one of ordinary skill in the art to utilize an additional separator arranged in the feed line for dividing the liquid phase from the gas phase. That is, Stark indicates that the separation unit 9 is operable to remove

or strip the gas and any other foreign material from the carrier liquid. Thus, Applicants respectfully submit that it would not have been obvious to one of ordinary skill in the art to add an additional separator to the system of Stark, as this would unnecessarily increase costs with no apparent additional benefit.

Thus, it appears that the Examiner is improperly relying on Applicants' own disclosure using impermissible hindsight reasoning. Applicants respectfully remind the Examiner of the guidance provided by MPEP § 2145(X)(A), regarding Impermissible Hindsight:

Applicants may argue that the examiner's conclusion of obviousness is based on improper hindsight reasoning. However, "[a]ny judgment on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper." *In re McLaughlin* 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971).

Thus, for these reasons, Applicants respectfully submit that Stark in view of Rohlfing does not render the present invention unpatentable.

Accordingly, for at least these reasons, Applicants respectfully request the rejection of claims 18, 22, 23, 25, 26 and 28 – 30 over Stark in view of Rohlfing be withdrawn.

Dependent Claims 19 and 24 over Stark in view of Rohlfing and Skinner

Claims 19 and 24 are dependent claims, depending from respective distinguishable base claims. Accordingly, these claims should also be in condition for allowance at least based upon their respective dependencies.

Additionally, Applicants submit that Stark in view of Rohlfing and Skinner does not teach or suggest each of the features of claims 19 and 24. Claim 19 recites, in pertinent part:

... feeding a partial volume flow of the separated liquid phase in a portioned manner to a suction side of the displacement pump via a short-circuited line.

Claim 24 recites, in pertinent part:

... a short-circuited line leading from a pressure-chamber side to the suction side of the displacement pump for portioned feeding of the separated liquid phase.

In addressing claims 19 and 24, the Examiner states that Stark in view of Rohlfing fails to disclose a short-circuited line for recirculating fluid through the displacement pump unit, but asserts “Skinner discloses a pump/separator system (18, 20) for well production having a short circuited line (23).” Additionally, the Examiner asserts that it would have been considered obvious “to have included the short-circuited line within the pump/separator system of Stark in view of Rohlfing, in order to have ‘improve[d] cleaning of the fluid’ (see Skinner column 2, line 19).” Applicants respectfully disagree.

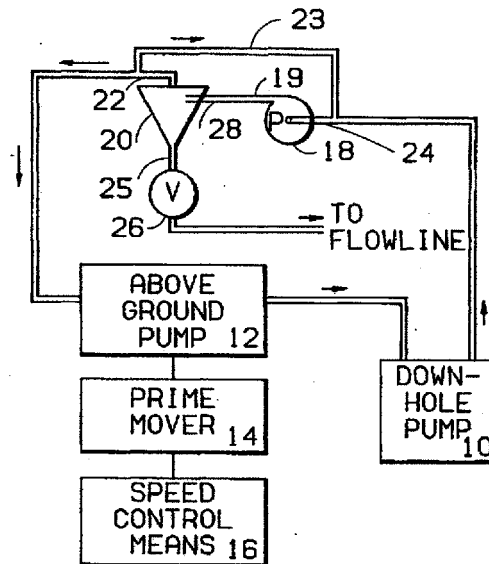
Initially, Applicants note that the Examiner did not address each of the features of claims 19 and 24. As such, as discussed further below, Applicants submit that the Examiner has not set for a clear record or a complete action.

Furthermore, Applicants submit that Stark in view of Rohlfing and Skinner does not teach or suggest each of the features of claims 19 and 24. For example, with regard to claim 19, Applicants submit that Stark in view of Rohlfing and Skinner does not teach or suggest “feeding a partial volume flow of the separated liquid phase in a portioned manner to a suction side of the displacement pump via a short-circuited line.” Additionally, with regard to claim 24, Applicants

submit that Stark in view of Rohlfing and Skinner does not teach or suggest “a short-circuited line leading from a pressure-chamber side to the suction side of the displacement pump.”

Skinner discloses a hydraulic pumping unit with a variable speed triplex pump.

Applicants have reproduced Figure 1 of Skinner below.



As shown in Figure 1, Applicants submit that the above ground pump 12 corresponds with the recited displacement pump of the instant invention and the down-hole pump 10 corresponds with the recited ejector pump of the instant invention.

With this in mind, Applicants submit that Stark in view of Rohlfing and Skinner does not teach or suggest feeding a partial volume flow of the separated liquid phase in a portioned manner to a suction side of the displacement pump via a short-circuited line, as recited in claim 19. That is, the Examiner-identified short circuited line 23 at least is not arranged to feed a suction side of the displacement pump, which Applicants submit corresponds to the above ground pump 12. Rather, as shown in Figure 1, the Examiner-identified short circuited line 23 directs flow from an outlet of the cyclone separator to an inlet of the cyclone feed pump 18.

Additionally, claim 16, from which claim 19 depends, defines the partial volume flow as between the outlet of the displacement pump and the inlet of the ejector pump. As such, Applicants submit that Stark in view of Rohlfing and Skinner does not teach or suggest feeding a partial volume flow of the separated liquid phase . . . via a short-circuited line. That is, the inlet of the Examiner-identified short circuited line 23 is not located between the outlet of the displacement pump (i.e., above ground pump 12) and the inlet of the ejector pump (i.e., above downhole pump 10), and thus the Examiner-identified short circuited line 23 is not arranged to feed the recited partial volume flow of the separated liquid phase.

Thus, Applicants submit that Stark in view of Rohlfing and Skinner does not teach or suggest each of the features of claim 19.

Additionally, Applicants submit that Stark in view of Rohlfing and Skinner does not teach or suggest a short-circuited line leading from a pressure-chamber side to the suction side of the displacement pump, as recited in claim 24. That is, as discussed above, the Examiner-identified short circuited line 23 directs flow from an outlet of the cyclone separator to an inlet of the cyclone feed pump 18. As such, Applicants submit that Stark in view of Rohlfing and Skinner does not teach or suggest a short-circuited line leading from a pressure-chamber side to the suction side of the displacement pump, which Applicants submit corresponds to the above ground pump 12 of Skinner.

Thus, Applicants submit that Stark in view of Rohlfing and Skinner does not teach or suggest each of the features of claim 24.

In addressing Applicants' arguments in the Response to Arguments, the Examiner states that:

Skinner is brought in merely to illustrate the principle of short-circuiting a pump and separator unit. Therefore, the location or arrangement of the

pumps in Skinner does not matter, as Stark provides all of those necessary teachings.

Applicants respectfully disagree.

Initially, as discussed above, Applicants respectfully submit that the Examiner has not addressed each of the features of claims 19 and 24. That is, in stating that “Skinner discloses a pump/separator system (18, 20) for well production having a short-circuited line,” Applicants submit the Examiner is not addressing each of the features recited in claims 19 and 24. In other words, in light of the fact that the Examiner has not explicitly addressed each of the features of claims 19 and 24, which recite the location of short-circuited line relative to the recited displacement pump, Applicants respectfully submit that the location or arrangement of the pumps in Skinner does matter, contrary to the Examiner’s assertions.

Moreover, while the Examiner asserts that it would have been obvious “to have included the short-circuited line within the pump/separator system of Stark in view of Rohlfing, in order to have ‘improve[d] cleaning of the fluid’ (see Skinner column 2, line 19),” Applicants respectfully submit that this is not the purpose of the flowback line of Skinner. Rather, the flowback line 23 of Skinner (which the Examiner designates as the recited short-circuited line) is used to regulate the flow through the cyclone separator to maintain the flow within an optimum range for effective separation in the cyclone separator, when the flow through the above-ground pump is varied. For example, Skinner discloses at column 3, lines 59 – 60 that (emphasis added):

Generally, the flow into the cyclone inlet 28 is to be kept relatively constant (within about +10%). This could be achieved by using a piston pump for the cyclone feed pump 18, driving the pump at a relatively constant speed (+10%) to keep the cyclone flow within the proper cleaning range.

Additionally, Skinner discloses at column 4, lines 34 – 39 that (emphasis added):

As gears are changed in the transmission, the flow through triplex pump 12 will change in essentially the same ratio as the gear ratio change. The inlet flow of the cyclone will drop slightly and the flow through flowback line 23 will go up significantly as triplex pump 12 is slowed down.

Furthermore, Skinner discloses at column 4, lines 58 – 66 that:

From the foregoing illustration, it can be seen that the configuration of this invention provides only a relatively small change in flow through cyclone 20 despite a 2:1 change in the flow through the triplex pump 12. Thus, the gears in transmission 32 can be changed (with the resultant power savings for the AC electric motor 30) while maintaining the flow in the range which gives good cleaning in cyclone 20, clean fluid being essential to minimize costly wear of the down pump 10.

In view of the above, Applicants submit that the flowback line of Skinner is used to regulate the flow through the cyclone separator such that optimum separation can occur.

However, Applicants submit that neither Stark nor Rohlfing utilize a cyclone separator. That is, Applicants submit that the circulating pump and ODC unit of Stark (which the Examiner designates as the recited displacement pump and ejector pump, respectively) are not cyclone separators. Moreover, the pump of Rohlfing is not a cyclone separator. Thus, Applicants submit that one of ordinary skill in the art would not be motivated to combine the flowback line of Skinner (which is used to ensure proper flow through, and thus effective separation by, a cyclone separator) with Stark and Rohlfing, which do not utilize a cyclone separator.

Accordingly, for at least these reasons, Applicants respectfully request the rejection of claims 19 and 24 be withdrawn.

Claim 20 over Stark

Claim 20 is a dependent claim, depending from a distinguishable base claim.

Accordingly, this claim should also be in condition for allowance at least based upon its dependency.

Additionally, Applicants submit that Stark does not teach or suggest each of the features of claim 20. Claim 20 recites, in pertinent part:

. . . further comprising, after the partial liquid flow has been split off, guiding the split off partial liquid flow through an additional separator for dividing a gas phase from a liquid phase.

In rejecting claim 20, the Examiner states that:

Stark does appear to disclose passing the fluid through the separator (9) twice (see Figure 1), however, Stark fails to disclose an additional separator. Even so, it would have been considered obvious to one of ordinary skill in the art, to have added an additional separator to the system of Stark, as this would have ensured that most or all of the gas was eliminated from the carrier fluid, and furthermore, because it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

Applicants respectfully disagree.

Initially, while acknowledging that Stark may “appear” to disclose passing the fluid through the separator 9 twice, Applicants submit that the disclosure of Stark states that the fluid is passed through the separator 9 only once. For example, Stark discloses at column 4, lines 19 – 24 (emphasis added):

On reaching the separator 9, the gas and any other foreign material is stripped from the carrier liquid prior to its return to the circulating pump 3.
The solid matter is also removed at the separator.

Thus, Applicants submit that Stark does not disclose passing the fluid through the separator 9 twice.

Furthermore, Applicants submit that it would not have been obvious to one of ordinary skill in the art to utilize an additional separator arranged in the feed line for dividing the liquid phase from the gas phase. That is, Stark indicates that the separation unit 9 is operable to remove or strip the gas and any other foreign material from the carrier liquid. Thus, Applicants respectfully submit that it would not have been obvious to one of ordinary skill in the art to add an additional separator to the system of Stark, as this would unnecessarily increase costs with no apparent additional benefit.

Thus, it appears that the Examiner is improperly relying on Applicants' own disclosure using impermissible hindsight reasoning. Applicants respectfully remind the Examiner of the guidance provided by MPEP § 2145(X)(A), regarding Impermissible Hindsight:

Applicants may argue that the examiner's conclusion of obviousness is based on improper hindsight reasoning. However, "[a]ny judgment on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper." *In re McLaughlin* 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971).

Thus, for these reasons, Applicants respectfully submit that Stark does not render the present invention unpatentable. Accordingly, Applicants respectfully request the rejection of claim 20 be withdrawn.

Claim 21 over Stark in view of Rivas

Claims 21 is a dependent claim, depending from a distinguishable base claim. Accordingly, this claim should also be in condition for allowance at least based upon its dependency.

Accordingly, Applicants respectfully request the rejection of claim 21 be withdrawn.

Claim 27 over Stark in view of Rohlfing and Rivas

Claims 27 is a dependent claim, depending from a distinguishable base claim. Accordingly, this claim should also be in condition for allowance at least based upon its dependency.

Accordingly, Applicants respectfully request the rejection of claim 27 be withdrawn.

New Claims

By this amendment, Applicants have added claims 31 and 32 for the Examiner's consideration. Applicants submit that claims 31 and 32 are dependent claims and recite further distinguishable features. For example, delivering the multi-phase mixture from the well is performed with an absence of a carrier fluid is not shown by Stark, Rohlfing and Skinner. That is, each of these documents discloses the utilization of a carrier (or conditioned) fluid in delivering a mixture from a well.

As such, Applicants respectfully request that the Examiner indicate the allowability of claims 31 and 32.

Complete Action Not Provided

Applicants respectfully submit that the Examiner did not provide a complete action, and as such, Applicants submit that the next action should not be a final action. The Examiner is reminded of the guidance provided by 37 C.F.R. § 1.104(a)(1) regarding the Nature of Examination (emphasis added):

On taking up an application for examination . . . the examiner shall make a thorough study thereof and shall make a thorough investigation of the

available prior art relating to the subject matter of the claimed invention. The examination shall be complete with respect to both compliance of the application . . . with the applicable statutes and rules and to the patentability of the invention as claimed, as well as with respect to matters of form, unless otherwise indicated.

Applicants submit that, as discussed above, each of the features of claims 19 and 24 were not properly treated as claimed.

Thus, for at least these reasons, Applicants submit that a clear record was not provided and a clear issue was not developed between Applicants and the Examiner.

More specifically, MPEP §706 states:

Before final rejection is in order a clear issue should be developed between the examiner and applicant. To bring the prosecution to as speedy conclusion as possible and at the same time to deal justly by both the applicant and the public, the invention as disclosed and claimed should be thoroughly searched in the first action and the references fully applied; and in reply to this action the applicant should amend with a view to avoiding all the grounds of rejection and objection.

Additionally, MPEP 706.07(a) notes:

Under present practice, second or any subsequent actions on the merits shall be final, except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims nor based on information submitted in an information disclosure statement filed during the period set forth in 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p). . . .

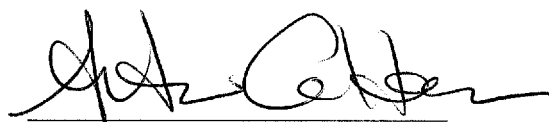
Furthermore, a second or any subsequent action on the merits in any application . . . will not be made final if it includes a rejection, on newly cited art, other than information submitted in an information disclosure statement filed under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17 (p), of any claim not amended by applicant or patent owner in spite of the fact that other claims may have been amended to require newly cited art.

Accordingly, Applicants respectfully request that the Examiner clarify the record by treating claims 19 and 24 as claimed. Moreover, Applicants respectfully submit that the next action, which should clarify the record, cannot be a final action.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants submit that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicants hereby make a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 19-0089.

Respectfully submitted,
Jens Uwe BRANDT et al.



Andrew M. Calderon
Reg. No. 38,093

GREENBLUM & BERNSTEIN, P.L.C.
1950 Roland Clarke Place
Reston, VA 20191
(703) 716-1191